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Abstract

The invention relates to a piezoelectric actuator for media flowing around it, with a piezo stack which is arranged within a deformable isolating material so as to be in direct contact therewith at least over certain regions, which isolating material is for its part enclosed by a fluidically closed actuator housing, which is formed by a housing shell which is delimited at its one end by a dimensionally stable actuator top and at its other end by a dimensionally stable actuator bottom. The actuator top and the actuator bottom are arranged on the active main surfaces of the piezo stack. To increase the service life, the housing shell is produced from a limp and/or elastic material and is disposed at a distance from the piezo stack at all points. The length of the housing shell, measured along the surface line, corresponds at least to the maximum extent of the piezo stack and/or the housing shell can be stretched accordingly. Furthermore, the isolating material is an electrically insulating fluid and/or a gel and at least largely fills the inside volume of the sealed actuator housing.